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AUTHOR Gordon, Susa n B.
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ABSTRACT

The major hypothesis of this study is that a significant relationship exists between English language ability (as measured by the Illinois Test of Psycholinguistic Abilities (ITPA) Full-Scale score) and language-modeling by the mother (as measured by the Mother-Child Interaction score on the Language Model Matrix), and between English language ability and total home language-modeling (as measured by the Total Interaction score on the Language Model Matrix). Sub-hypotheses state that English language ability, language-modeling by the mother, and total home language-modeling significantly differ according to (1) ethnicity, (2) socioeconomic status (SES), and (3) language model type. The sample consisted of first-grade children: 50 Navajo Indian, 55 Pueblo Indian, and 50 rural Spanish-American. A Language Model Matrix was designed to provide ar operational framework. Test results support the major and sub-hypotheses. As acculturation and SES increase, so does the quantity of verbal interaction in the home. Programs to alleviate poverty, and to teach mothers how to teach their children, are of vital importance in the elimination of linguistic disadvantagement. (Author/NH)

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Ethnic and Socioeconomic Influences on the Home Language Experiences of Children

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Southwestern Cooperative Educational Laboratory, Inc.
117 Richmond Drive, N. E.
Albuquerque, New Mexico 87106

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INTRODUCTION

Children from non-middle-majority homes enter school insufficiently prepared for the learning styles of the classroom. The culture of their environment is not congruent with the culture that has influenced the school and the development of its accompanying theories and educational techniques. They have had socializing experiences which differ from those undergone by children raised according to middle class culture norms. These home experiences strongly influence the patterns of perceptual, linguistic, and cognitive development of children.

In order to better understand the linguistic and academic disabilities of non-middle-majority children, it is necessary that one analyze the verbal interactions among family members in the home. Our knowledge about language development suggests the thesis that the opportunity for frequent one-to-one verbal interactions is one of the most effective language-learning experiences. It was the goal of this study to treat this thesis empirically by examining the relationship between a variety of home language-modeling situations and the English language abilities of children. Primary emphasis was placed on the mother as a language-modeler. Secondary consideration was given to the influences that Ethnicity, Socioeconomic Status (SES), and Language Model Type (bilingual or monolingual) have on English language ability; on language-modeling by the mother; and on total home language-modeling.

As we identify links between a child's environment and his linguistic abilities, we arrive at a deeper understanding of the relationship of social process to language-learning and cognition in children. The major objective of this study was to move beyond gross classificatory variables, such as SES and culture, to a more refined assessment of the critical environmental features that are closely articulated with language development. The design

called for detailed examination of the linguistic implications for the child, of monolingual (English or Native Language) or bilingual (English/Native or Native/English) language models in the home. The effect of verbal interactions with various language-modeling sources in a wide range of typically middle-majority family activities was also studied. The significance of this study lies in its contribution to a definition of "linguistic disadvantagedness" which is based upon particular clusterings of environmental circumstances which vary within and across SES and ethnic lines.

Theoretical Framework

There are a number of factors that differentiate the non-middle-majority home environment. Deutsch (1963) emphasizes the negative effects of being reared in the meager physical surroundings that are typical of low SES. Bernstein (1968) delineates socially-induced differences. A social group, by virtue of its class relation or ethnic affiliation, shares common role systems and personal orientations and, consequently, a common form of communication. The more divergent the social group is from the middle-majority group, the more closed the communication system and the fewer the opportunities for sustained verbal dialogues. A number of investigators have presented the thesis that early experiences in the home influence not only the child's language development but also his cognitive style. The kinship relationship that has been stated to be the most significant with respect to the child's growth is that between mother and child. Olim, Hess, and Shipmen (1965) assert that the mother's linguistic and teaching behavior is a key to the child's learning in the home. Hess and Shipmen (1965) note that the mother's control system, which manifests itself both verbally and non-verbally, restricts or

expands the number and kind of alternatives for action and thought that are open to the child. Stodolsky (1965) adds the dimension of the mother's own language quality as a factor in the linguistic and cognitive development in the child. The qualitative aspect of language-modeling may be described along a restricted code/elaborated code continuum or, when culturally-oriented, along a monolingual/bilingual continuum. Bernstein (1966) distinguishes between the restricted code, which is speech that uses relatively limited linguistic resources, and the elaborated code, which is speech that allows a larger number of structural options. Osgood (1963) describes bilingualism as the acquisition and utilization of two linguistic codes. The messages produced in the two languages employ differently constructed and organized units, different grammatical rules, and different lexical systems. He suggests that two codes, and the accompanying two systems of decoding and encoding habits, are rarely employed by an individual without interference. Macnamara (1966) supports the balance effect--that instruction in the second language often has an erosive effect on the first language. Spolsky (1968) adds that a bilingual's linguistic skill in each language is less than the monolingual's in one language. Carroll (1968:80) is of the notion that "the degree to which bilingualism affects native language development is a function of the amount and kind of exposure such a condition allows the child to get to his native language, quite independently of how much exposure he receives to the other language involved." The question of the effect of bilingualism on language development is a complicated one that depends upon such factors as (1) the relative status of the two languages involved; (2) the type of bilingual situation; and (3) whether the child receives school instruction in his native or the second language.

John (1964) stresses verbal reinforcement, placing considerable emphasis

on the role of parent-child dialogues. Jensen (1968:155) is also an advocate of frequent opportunities for verbal interaction and reinforcement and states that:

> "The degree of subtlety, diversity, and complexity of syntactical structure of the verbal environment will determine the nature of the syntactical processes incorporated by the developing child. The extent to which these structures become incorporated is a function of the frequency with which they are experienced in the environment, the degree to which the social environment reinforces their overt manifestation, and the individual's basic capacity for learning."

Jensen (1968) further adds that, although non-middle-majority children are little different from middle-majority children in basic learning capacity, they are handicapped in academic learning situations because they have been deprived of the opportunities to learn the range of concepts and verbal associations that are needed to facilitate such learning.

In summary, the richness of home language experiences is related to language development. The mother-child relationship has been identified as a significant agent in the child's growth. Thus, the empirical examination of the theorized relationship between home language-modeling quality and quantity and linguistic ability must be undertaken with emphasis on mother-child interaction as well as on the total verbal interactions the child has in the home. Communicative relationships vary with sociocultural factors. Hence, it follows that the mother-child verbal relationship would also vary.

Statement of the Hypotheses

Main Hypothesis. A significant relationship exists between English language ability (as measured by the Illinois Test of Psycholinguistic Abilities (ITPA) Full-Scale score) and language-modeling by the mother (as measured by the Mother-Child Interaction score on the Language Model Matrix), and between English language ability and total home language-modeling (as measured by the Total Interaction score on the Language Model Matrix).

Sub-Hypothesis 1. English language ability; language-modeling by the mother; and total home language-modeling significantly differ according to Ethnicity.

Sub-Hypotheses 2. English language ability; language-modeling by the mother; and total home language-modeling significantly differ according to SES.

Sub-Hypotheses 3. English language ability; language-modeling by the mother; and total home language-modeling significantly differ according to Language Model Type.

The statistical techniques utilized to test the hypotheses were Product Moment correlation, Multiple Linear Regression Analysis, Single-Classification Analysis of Variance, and the C statistic.

Within the framework of this study, it must not be assumed that the ITPA was a measure of psycholinguistic abilities. The subjects were, for the most part, speakers of English as a second language. Therefore, it was English language ability that the ITPA measured. It was the intention of this investigation to demonstrate only the relationship between the proximity of a child's home language-modeling environment to middle-majority norms and the proximity of that child's ITPA performance to middle-majority language norms.

SAMPLE

The sample consisted of 50 Navajo Indian first-grade children from Sanders, Arizona; 55 Pueblo Indian first-grade children from five pueblos (Cochiti, Sandia, Santa Ana, San Felipe, and Santo Domingo) in the Bernalillo, New Mexico area; and 50 rural Spanish-American first-grade children from Bernalillo, New Mexico.

For hypotheses-testing purposes, the sample was regrouped, across Ethnic lines, according to Heath's index of social-class identification (1958).

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The estimate of the SES of the subjects in this study yielded 71 Lower-Lower SES first-grade children; 75 Upper-Lower SES first-grade children; and 9 Lower-Middle SES first-grade children. Statistical requirements prompted the combining of Upper-Lower SES and Lower-Middle SES for a number of the analyses.

The sample was also regrouped across Ethnic and SES lines, according to Language Model Type. There were 43 Native Only first-grade children, 51 Native/English first-grade children, 16 English/Native first-grade children, and 45 English Only first-grade children. Statistical requirements prompted the combining of Native/English and English/Native into Bilingual for a number of the analyses.

PROCEDURES

This study was an outgrowth of previous research conducted at the Southwestern Cooperative Educational Laboratory (SWCEL) in Albuquerque, New Mexico. Researchers at SWCEL hypothesized that school readiness differences among first-grade children from different cultures were results of their having been exposed to different home environments. Among the data gathering instruments were the ITPA (McCarthy and Kirk, 1963) and the Wolf Home Interview Questionnaire (Wolf, 1965). The ITPA was administered by trained examiners. The Wolf Questionnaire was utilized with mothers or mother-substitutes by high-school-educated, bilingual, native informants. It was concluded by the staff that the evidence accumulated under the aegis of Garber (1968) and Thiel (1968) substantiated the general hypothesis of culture-based learning styles.

It must be noted that gross environmental variables might have been considered by the SWCEL researchers to be the critical variables that influence learning styles. By focusing only on home language-modeling, this study attempted to control for extraneous status-related or ethnically-based variables

and so render a more precise identification of the key socio-cultural influences.

The research project conducted by SWCEL focused more on a detailed analysis of the test data than on the environmental data obtained for each child. A careful appraisal of the Wolf Questionnaire uncovered the fact that the raw data collected by this instrument contained information which inadvertently became masked in the scoring process devised by Wolf (1965). To establish an operational framework for this investigation, the Language Model Matrix (LaMM) was designed (see Appendix A). The LaMM incorporates language model types; language-modeling sources; and language-modeling contexts. The possible language model types to which children may be exposed are Native Language Only models; Native/English or English/Native (Bilingual) models and English Only models. The possible language-modeling sources in the home are the mother or mother-substitute; the father or father-substitute; older siblings; and any number of adults. One-way communication sources may take the form of television or the act of reading to the child. The potential contexts for language-modeling are recreation; eating dinner; interrogation about school progress; assistance in schoolwork; speech correction; and praise. The source and context information was abstracted from the responses to 34 questions on the Wolf Questionnaire rather than only to the 10 questions specified by Wolf as indicative of Language Press. The end product of the placement of the Wolf Questionnaire raw data within the LaMM may be expressed as a description of the daily opportunities for verbal interactions into which the child may enter, specifying the individuals involved in each type interaction and the language(s) spoken with these individuals.

The LaMM, devised for this study, served as the framework for the Wolf

Questionnaire raw data for each subject. At the intersection of each language-modeling source and each language-modeling context, the appropriate Language Model Type was inserted, as well as an indicator of the frequency of the specific verbal interaction. A numerical score was assigned at each intersection, e.g., 0 in the absence of interaction; 1 in the presence of interaction; and 2 in the presence of frequent interaction. The output, then, is a numerical score for each language-modeling source and each language-modeling context; and a numerical score for the total interaction in the home. The quality of language-modeling in the home, as well as quantity, received consideration. Quality, by definition in this study, refers to the type of language model employed in the home. Although Language Model Types were not given numerical weighting, type differences entered significantly into the analysis of home language-modeling.

FINDINGS

The Main Hypothesis states that a significant relationship exists between English language ability and language-modeling by the mother and between English language ability and total home language-modeling, and was tested by Product Moment Correlation and accepted at the .01 level of confidence.

As shown in Table I (See Appendix B), within the total sample, English language ability (ITPA performance); language-modeling by the mother (Mother-Child Interaction); and total home language-modeling (Total Interaction), significantly correlated. The data in Tables II, III, IV, V, VI, VII, VIII, and IX (see Appendix C) indicate that the relationships between ITPA performance and Mother-Child Interaction, and between ITPA performance and Total Interaction, were maintained throughout all Ethnic; SES; and Language Model Type groups.

Multiple Linear Regression Analysis established the fact that ITPA performance may be predicted from the combined scores of Mother-Child Interaction and Total Interaction as is shown in Table X (see Appendix D). The treatment

of the Total Interaction score separately revealed that the twelve dimensions of which the LaMM is comprised are, together, and in various combinations, also capable of predicting ITPA performance. Table XI (see Appendix D) notes the relative contributions of each to the prediction. The relative contributions of the key predictive dimensions are as follows: Watching Television; Reading to the Child; Mother-Child Interaction; Interrogation about School Progress; Mother-Child Interaction; and Recreation.

Discussion and Implications

In almost every instance, Mother-Child Interaction correlated more strongly than Total Interaction with the ITPA score. In the Ethnicity category, the strongest Mother-Child Interaction - ITPA correlation appeared in the Pueblo Indian group. In the SES category, the strongest Mother-Child Interaction - ITPA correlation was demonstrated in the Lower-Lower SES group. In the Language Model Type category, the strongest Mother-Child Interaction-ITPA correlation existed in the Bilingual group. Because the Pueblo Indian; Lower-Lower SES; and Bilingual groups are the most heterogeneous with respect to acculturation and SES, and are at varying stages in the middle-majority culture-striving process, the verbal association between mother and child is the most powerful and the most crucial.

Since language experiences in the home are related to English language ability, programs designed to further verbal interaction in the child-rearing environment are recommended. The strength of the mother-child relationship brings one to question the advisability of establishing programs that discourage interaction between mother and child.

Sub-Hypotheses 1 states that English language ability; language-modeling by the mother; and total home language-modeling significantly differ according

to Ethnicity, and was tested by Single-Classification Analysis of Variance and accepted at the .01 level of confidence. The C Statistic was utilized to determine the direction and intensity of the differences.

As shown in Table XII (see Appendix E), for the Navajo Indian; Pueblo Indian; and Rural Spanish-American groups; significant differences existed on the dimensions of English language ability (ITPA performance); language-modeling by the mother (Mother-Child Interaction); and total home language-modeling (Total Interaction). The C Statistic indicated that the greatest significant difference was between Navajo Indian and Rural Spanish-American. Further evidence on the influence of Ethnicity was gathered through a sequence of Single-Classification Analyses of Variance and C Statistics performed on groups controlled for SES and Language Model Type.

Discussion and Implications

In general, the Rural Spanish-American group, which is the most acculturated and highest socioeconomically of the three Ethnic groups, was found to score the highest on the English language ability measure, the ITPA, and to be subjected to the highest frequency of language-modeling by the mother as well as total home language-modeling.

When Language Model Type was held constant, other patterns emerged. When only native language or the native language and English were spoken in the home, the Pueblo Indian group maintained the highest score on all three dimensions. This may be attributed to the fact that Native Only and Bilingual groups are not, by nature of the language(s) spoken, highly acculturated or highly elevated socioeconomically. The Pueblo Indian Native Only and Bilingual groups, though, are more acculturated and have achieved higher SES than the Navajo Indians and Rural Spanish-Americans who speak the native language or a

combination of the native language and English in the home. In the English Only group, no differences emerged ethnically because the speaking of English implies the adoption, to a large extent, of middle-majority norms which include a high frequency of mother-child interaction and total verbal interaction in the home.

The Rural Spanish-American group, at the Lower-Lower SES level, scored the highest on the ITPA because the Rural Spanish-American group has the highest percentage of non-native language speakers. The higher degree of acculturation of the Lower-Lower SES Pueblo Indian group manifests itself again on the other two dimensions. It is the Pueblo Indian group, not the Rural Spanish-American group, which scored the highest. Within the Upper-Lower to Lower-Middle SES group, no differences emerged on the ITPA because of the predominance of English spoken at this SES level. However, the Rural Spanish-American group reclaimed its lead on the other two dimensions because the Upper-Lower to Lower-Middle SES Rural Spanish-American more closely approximate the middle-majority culture than the Upper-Lower to Lower-Middle SES Pueblo Indian.

Since the richness of language experiences in the home and subsequent English language ability is related to the degree of acculturation, programs designed to further the acculturation process are recommended. Although the outcomes of bilingual and bicultural education programs have not been explored empirically, the data gathered in this study imply that certain programs of this nature may be potential deterrents to the attainment of middle-majority status. Middle-majority curricular elements essential for academic success should not be sacrificed in order to accommodate programs which may be more emotionally than empirically sound. This recommendation, however, does not preclude the need for culturally-relevant curricula.

Sub-Hypothesis 2 states that English language ability; language modeling by the mother; and total home language-modeling significantly differ according to SES, and was tested by Single-Classification Analysis of Variance and accepted at the .01 level of confidence. The C Statistic was utilized to determine the direction and intensity of the differences.

As shown in Table XIII (see Appendix F), for the Lower-Lower SES; Upper-Lower SES; and Lower-Middle SES groups, significant differences existed on the dimensions of English language ability (ITPA performance); language-modeling by the mother (Mother-Child Interaction); and total home language-modeling (Total Interaction). The C Statistic indicated that the greatest significant difference was between Lower-Lower SES and Upper-Lower SES. Further evidence on the influence of SES was gathered through a sequence of Single-Classification Analyses of Variance and C Statistics performed on groups controlled for Ethnicity and Language Model Type.

Discussion and Implications

As SES increases, so does English language ability, and the frequency of language-modeling by the mother and total home language-modeling. SES exerts little influence on the ethnic groups because each ethnic group is closely affiliated with a specific socioeconomic level. The Navajo Indian primarily belongs to the Lower-Lower SES, whereas the Pueblo Indian and the Rural Spanish-American primarily belong to the Upper-Lower to Lower-Middle SES. The absence of SES influence on the Native Only group is equated with Lower-Lower SES membership, and the English Only group is equated with Upper-Lower to Lower-Middle SES membership. The Bilingual group, however, which encompasses all Ethnic groups and socioeconomic levels, supports the general trend that as SES increases, so does the ITPA score; mother-child interaction; and total interaction.

Since the richness of language experiences in the home and subsequent English language ability is related to SES, programs designed to raise SES are recommended. Current national attempts to eliminate poverty find much support in the findings of this investigation. The influence of SES exceeds that of Ethnicity, a finding substantiated by Casavantes (1969), implying that SES-elevating efforts should underlie and accompany bilingual and bicultural education programs.

Sub-Hypotheses 3 states that English language ability; language-modeling by the mother; and total home language-modeling significantly differ according to Language Model Type, and was tested by Single-Classification Analysis of Variance and accepted at the .01 level of confidence. The C Statistic was utilized to determine the direction and intensity of the differences.

As shown in Table XIV (see Appendix G), for the Native Only; Native/English; English/Native; and English Only groups, significant differences existed on the dimensions of English language ability (ITPA performance); language-modeling by the mother (Mother-Child Interaction); and total home language-modeling (Total Interaction). The C Statistic indicated that the greatest significant difference existed between Native Only and English Only. Further evidence on the influence of Language Model Type was gathered through a sequence of Single-Classification Analyses of Variance and C statistics performed on groups controlled for Ethnicity and SES.

Discussion and Implications

When English is spoken in the home there is a greater amount of language-modeling. Obviously, the more command the subject has of the English language, the greater his chances for scoring well on the ITPA, a test administered in English. On the interaction dimensions, it is evident that language serves as

an indicator of acculturation and SES. An English Only Language Model Type is indicative of mother-child interaction and total interaction closely approximating middle-majority norms. Even within the Bilingual group, the English/Native group were subjected to greater frequency of total home language-modeling than the Native/English group.

Within each Ethnic group and SES group, ITPA scores varied with the amount of English spoken in the home. Interaction differences were always apparent between the Native Only (the lowest group with respect to acculturation and SES) and the English Only (the highest group with respect to acculturation and SES) Language Model Type groups. No interaction differences appeared within the Navajo Indian group because of the homogeneity of this group with respect to Language Model Type. Within the Pueblo Indian and Rural Spanish-American groups, the general trend of language-modeling increasing with the amount of English spoken in the home was adhered to. More mother-child interaction differences were noted in the Rural Spanish-American group than in the Pueblo Indian group because the Pueblo Indian bilingual speakers are more similarly acculturated and socioeconomically-positioned than the Rural Spanish-American bilingual speakers.

Within the Lower-Lower SES group, the same reason attributed to the Navajo Indian group for the absence of mother-child interaction differences may be applied here--homogeneity of sample. This does not carry over to the Upper-Lower to Lower-Middle SES group, though, which demonstrates several Language Model Type differences on the Mother-Child Interaction dimension because of acculturative heterogeneity.

Since the amount of English spoken in the home is related to the quantity of verbal interaction in the home, as well as subsequent English language ability, programs designed to accelerate the degree of English employed in the

child-rearing environment are recommended. The strong influence of the Language Model Type employed by mothers in interactions with their children suggests a need for the teaching of English as a second language to mothers. The superiority of the English Language Model Type over the Bilingual Language Model Type implies that there is a cost attached to bilingual education programs. Though bilingualism may be associated with a lesser degree of success in middle-majority-oriented schools, however, the liabilities of furthering it through curricula may be outweighed by the positive attitudes engendered in local communities and in the nation as a whole.

CONCLUSIONS

The definition of "linguistic disadvantagedness", which stems from the findings of this study, is based upon a clustering of environmental factors which crosses Ethnic and SES lines. Basically, a child is linguistically disadvantaged if he is not exposed to frequent language-modeling, in English, in the home, in general, and frequent language-modeling, in English, by the mother, in particular.

The relationship between language-modeling and English language ability is a firm one, maintaining itself no matter what Ethnic, SES, or Language Model Type influences are exerted. Language-modeling, in addition to being related to ITPA performance, is also a strong predictor of ITPA performance. The strong predictive abilities, with respect to English language ability, of the dimensions of Watching Television and Reading to the Child have raised an important point. The two dimensions are one-way language-modeling sources. A child, when subjected to these sources, is an outwardly passive recipient. Internal dialogues, however, similar to those discussed by Bereiter and Englemann (1966), may transpire. As a consequence of exposure to such English Language Models,

a child may be stimulated to engage in dialogues with himself, in the language of the modeling source, and subsequently develop his ability to manipulate the English language. It is interesting to note that the dimensions of Watching Television and Reading to the Child do not involve reinforcement or corrective feedback--elements essential to Skinnerian theory. The alternative theory proposed by Chomsky (1965), which states that mere exposure to language-modeling sources is sufficient to trigger the language-processing mechanisms of a child, appears to carry more weight in this situation. The Chomskian theory of language acquisition should also be kept in mind when considering two-way language-modeling sources. Nowhere in this investigation has it been implied that interaction between mother and child may be equated with dialogues incorporating extensive reinforcement and corrective feedback. Frequency of mother-child interaction simply indicates frequency of exposure to the mother as a language-modeling source in potential learning situations.

Differences emerge on the dimensions of English language ability; language-modeling by the mother; and total home language-modeling according to Ethnicity, SES, and Language Model Type. The Navajo Indian group scored the lowest on all three dimensions, followed by the Pueblo Indian group and the Rural Spanish-American group. The Lower-Lower SES group scored the lowest on all three dimensions, followed by the Upper-Lower SES group and then the Lower-Middle SES group. The Native Only group scored the lowest on all three dimensions, followed by the Native/English group, the English/Native group, and finally the English Only group.

Clearly, frequency of language-modeling by the mother and total home language-modeling is an accompaniment of Ethnicity and SES. As acculturation increases and SES increases, so does the quantity of verbal interaction in the

home. More influence is exerted by SES, than by acculturation, though, because factors which may easily be considered acculturative in nature are really socioeconomically-based. The highest-scoring Ethnic group, the Rural Spanish-American, is the most acculturated of the three, but is also of the highest SES. The Navajo Indian is the lowest-scoring and least acculturated of the three Ethnic groups, but is also of the lowest SES. The influence of Ethnicity at the Lower-Lower SES level is significant and at the Upper-Lower to Lower-Middle SES level, less apparent. In addition, the higher the SES, the more English is present in the Language Model.

In conclusion, a strong contributing factor to linguistic disadvantagedness is low SES. The elimination of linguistic disadvantagedness may very well be dependent upon the elimination of poverty.

EDUCATIONAL IMPLICATIONS OF THE FINDINGS

In a recent statement to the public, Health, Education, and Welfare Secretary Robert Finch (1969:4) said that "the Administration will put new emphasis on working with the family unit and especially the mother....America's future will be shaped in the home with the schools playing only a secondary role".

The findings of this study provide empirical support for Finch's proposed solution to the educational problems in our country. The impact of environmental variables on the linguistic abilities of children can no longer be denied. The more closely home language experiences approximate middle-majority norms, the more closely children subjected to such verbal interrelations can approximate the norms of the American educational enterprise. If the potency of familial verbal interaction, and particularly mother-child interaction, is recognized by educators, there is no other choice but to increase the quantity

and quality of verbal interaction in non-middle-majority homes.

Increased quality and quantity of verbal interaction are indicative of higher acculturation and SES. A long-range goal, then, would be to accelerate the attainment of middle-majority status for as large a percentage of the populace as possible. The intention is not to deprive minority group members of their cultural identities but rather to supplement these identities with those aspects of middle-majority status that correlate with success in our system of education. There is a need to examine bilingual and bi-cultural education in this perspective. Bilingual education is essential until the degree of proficiency necessary for receiving instruction in English is achieved. Bilingual instruction beyond the teaching English as a second language stage is not essential. According to Mackey (1969), although there is a price to pay for the establishment of bilingual education, the academic deficiencies which stem from instruction in the weaker language may well be worth the learning of two languages. This investigation has suggested, however, that there may be an even greater price to pay than has been previously anticipated. Bilingual education may serve to hinder the acculturation process. Much merit has been assigned to bi-cultural education, particularly in connection with its goal of building ethnic pride. Nevertheless, excitement over bi-cultural education--the maintenance of children in two cultures, must not allow educators to overlook the fact that they could be inadvertently encouraging tri-cultural education --the third culture being that of the Culture of Poverty. If the development of feelings of worth in children who foresee only future failure is of prime concern, then the major moves should be made in the area of SES. There is no pride in poverty!

Widespread elevation of SES cannot be accomplished immediately, unfortunately, which means that a short-term plan must be initiated. The empirically-

established relationship between language-modeling by the mother in English and English language ability provides the focus for such a plan. The importance of communication between mother and child requires that this relationship be maximized and not left to chance. Educators should involve themselves in adult education programs designed specifically for teaching mothers how to teach their children. Mothers first need to be made aware, and then convinced, of the importance of providing frequent and varied opportunities for verbal interaction. They need to be instructed in the methods of engaging their children in dialogues and sustaining these verbal exchanges. They also need to be subjected to English as a Second Language Program. The value of mother-child interaction has been established. The value of mother-child interaction which incorporates learning-inducing dialogues, in English, cannot be overstated.

SUGGESTIONS FOR FURTHER RESEARCH

Statistical analyses have demonstrated that English language ability is related to and may be predicted from certain environmental process variables. The LaMM, which is the source for portraying total language-modeling in the home, is capable of predicting English language ability. The LaMM dimension of Mother-Child Interaction and the LaMM in its entirety are strong predictors of success on the ITPA, with the mother-child relationship providing the greater input to the prediction. Thus, the research step of most immediacy would be that of restructuring the LaMM and developing a new home interview questionnaire based upon the empirical evidence accumulated in this study. If total home language-modeling is also to be included in the new Home Interview Questionnaire, then questions, which are constructed to extract information on all language-modeling dimensions, should not be directed solely at the

mother or mother-substitute. Interviewees should consist of every family member about whom child interaction questions are asked, so that mother or mother-substitute perceptual bias may be eliminated. The value of such a project lies in the fact that an instrument which assesses home environments and predicts English language ability greatly lessens the need for administering language ability tests to children entering school. Much time is extended in test administration and much frustration is experienced by examiners and examinees alike if English language ability is negligible or nil.

While the LaMM is in the process of revision, and a home interview questionnaire is in the process of construction, the instrument employed in this study, though not flawless, should be reemployed as a data-gathering instrument with samples other than those which comprised this investigation. It is suggested that this study be extended to include other groups which are comprised of speakers of English as a second language or dialect. Another beneficial replication of this study would be with a middle-majority sample. By again offering ITPA performance as the criterion variable, a relationship between home language-modeling and psycholinguistic ability may now be established since the language of the home and the language of the test are equivalent. Further elaboration on the relationship between ability and home language-modeling may be achieved through the examination of the environments of children from different cultures and the examination of their performance on culturally relevant tests administered in the native languages.

The most difficult research design to execute, yet the most imperative as far as the findings of this study are concerned, is one which entails observation in the naturalistic setting. The quantity of mother-child interaction should receive a more accurate and detailed assessment than that provided through home interviews. The quality of mother-child interaction cannot, with any degree of reliability, be determined through home interviews and consequently

requires observational procedures.

Once sophistication is reached in the area of assessment of home language-modeling, research efforts should be channeled toward predicting, from environmental process variables, non-linguistic factors such as cognitive ability; school achievement; personality; and motivation. The acknowledgment of the influence of sociolinguistic variables is only of recent origin. The continuation of research in this field may lead to the development of a new philosophy of education--one that could require dramatic change in national educational priorities.

APPENDIX A

LANGUAGE MODEL MATRIX (laMM)

(Copyright 1969)

CONTEXT

INTERACTION	Recreation	Eating Dinner	Interrogation: School Progress	Assistance: Schoolwork	Speech Correction	Praise	SCORING
Mother ◄——► Child	K/E*	K/E*	K/E*		K/E*	K/E*	10
Father ◄——► Child	K/E*	K/E*	K/E*			K/E*	8
Older Siblings ◄——► Child	K/E*	K/E*					4
Other Adults ◄——► Child	K/E*						6
Mother Reading ◄——► Child	E*						2
T.V. ◄——► Child	E*						2
SCORING	8	6	4		2	4	32

(Sample laMM)

APPENDIX B

CORRELATIONS BETWEEN ITPA SCORES AND TOTAL MOTHER-CHILD INTERACTION AND TOTAL INTERACTION FOR THE TOTAL SAMPLE

N=155

TABLE I

	ITPA	MOTHER-CHILD INTERACTION	INTERACTION
ITPA	1.00	.61**	.58**
MEAN	111.06	8.54	20.27

**p<.01

APPENDIX C

CORRELATIONS BETWEEN ITPA SCORES AND MOTHER-CHILD INTERACTION AND TOTAL INTERACTION SCORES FOR ETHNIC GROUP

TABLE II

NAVAJO N=50

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.42**	.40**
MEAN	94.04	6.22	14.54

** p<.01

TABLE III

PUEBLO N=55

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.60**	.52**
MEAN	116.96	9.29	22.87

** p<.01

TABLE IV

RURAL SPANISH-AMERICAN N=50

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.42**	.43**
MEAN	121.60	10.02	23.14

APPENDIX C (Cont'd)

CORRELATIONS BETWEEN ITPA SCORES AND MOTHER-CHILD INTERACTION AND TOTAL INTERACTION SCORES FOR SES GROUPS

TABLE V

LOWER-LOWER N=71

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.56**	.49**
MEAN	101.75	7.34	16.49

** p<.01

TABLE VI

UPPER-LOWER TO LOWER-MIDDLE N=84

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.54**	.48**
MEAN	118.94	9.55	23.10

** p<.01

APPENDIX C (Cont'd)

CORRELATIONS BETWEEN ITPA SCORES AND MOTHER-CHILD INTERACTION AND TOTAL INTERACTION SCORES FOR LANGUAGE MODEL TYPE GROUPS

TABLE VII

NATIVE ONLY N=43

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.41**	.39**
MEAN	95.14	6.91	16.40

**p<.01

TABLE VIII

BILINGUAL N=67

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.55**	.55**
MEAN	108.90	8.33	19.91

**p<.01

TABLE IX

ENGLISH ONLY N=45

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
ITPA	1.00	.44**	.40**
MEAN	129.51	10.40	24.51

APPENDIX D

SUMMARY OF MULTIPLE REGRESSION ANALYSIS BETWEEN LANGUAGE-MODELING DIMENSIONS AND ITPA PERFORMANCE

TABLE X

Multiple R = .62233 **		
Predictor Variable	**Correlation**	**Regression Coefficient**
Mother-Child Interaction	.61	4.17
Total Interaction	.55	0.79
Ciriterion Variable ITPA Performance		

** p<.01

APPENDIX D (Cont'd)

SUMMARY OF MULTIPLE REGRESSION ANALYSIS BETWEEN LANGUAGE-MODELING DIMENSIONS AND ITPA PERFORFORMANCE

TABLE XI

Multiple R = .67555		
Predictor Varible	**Correlation**	**Regression Coefficient**
Recreation	.40	2.03
Eating Dinner	.02	0.51
Interrogation:School Progress	.47	4.18
Assistance:Schoolwork	.43	0.22
Speech Correction	.42	1.31
Praise	.36	0.02
Mother-Child Interaction	.61	2.05
Father-Child Interaction	.31	-1.27
Sibling-Child Interaction	-.03	-0.87
Adult-Child Interaction	.23	-1.49
Reading to Child	.51	5.00
Watching Television	.51	6.25
Criterion Variable		
ITPA Performance		

** p<.01

APPENDIX E

MEAN ITPA SCORES AND MEAN MOTHER-CHILD INTERACTION AND TOTAL INTERACTION SCORES FOR ETHNIC GROUPS

TABLE XII

		ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
N=50	NAVAJO INDIAN	94.04	6.22	14.54
N=55	PUEBLO INDIAN	116.96	9.29	22.87
N=50	RURAL SPANISH-AMERICAN	121.60	10.02	23.14
	F	19.17**	38.02**	33.34**

** p<.01

APPENDIX F

MEAN ITPA SCORES AND MEAN MOTHER-CHILD INTERACTION AND TOTAL INTERACTION SCORES FOR SES GROUPS

TABLE XIII

	ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
N=71 LOWER-LOWER	101.75	7.34	16.49
N=75 UPPER-LOWER	117.52	9.32	22.85
N=9 LOWER-MIDDLE	130.78	11.44	28.56
F	10.10**	16.96**	27.81**

**p1.01

APPENDIX G

MEAN ITPA SCORES AND MEAN MOTHER-CHILD INTERACTION AND TOTAL INTERACTION SCORES FOR LANGUAGE MODEL TYPE GROUPS

TABLE XIV

		ITPA	MOTHER-CHILD INTERACTION	TOTAL INTERACTION
N=43	Native	95.14	6.91	16.40
N=51	N/E	105.18	7.92	18.61
N=16	E/N	120.75	9.63	24.06
N=45	English	129.51	10.40	24.51
	F	18.67**	16.89**	14.99**

** p1.01

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CURRICULUM VITAE

Susan B. Gordon was born in Brooklyn, New York, on April 6, 1940. Upon graduation from Brooklyn's Midwood High School in 1957, she was the recipient of a New York Regents State Scholarship. Undergraduate work was pursued at the Julliard School of Music; The University of Wisconsin at Milwaukee; Brooklyn College; and the University of Washington, as well as The University of New Mexico from which she received a B.S. in Elementary Education in June, 1961. After a year's teaching experience in the Albuquerque Public Schools, she taught in the Los Alamos, New Mexico School System for four years. In 1966, she returned to the University of New Mexico as a Graduate Assistant in the Department of Elementary Education. In 1967, she was awarded a NDEA-Title IV Fellowship for doctoral studies. During the summer of 1967, she served as a Field-Tester of the USOE-UCLA linguistic materials for the Southwestern Cooperative Educational Laboratory in Albuquerque, New Mexico. She received a M.A. in Elementary Education in June, 1968. During the summer of 1968, she attended The University of Illinois Linguistic Institute, sponsored by the Linguistic Society of America, on a Ford Foundation Fellowship granted by the American Council for Learned Societies. She received a Ph.D. in Curriculum and Instruction from the University of New Mexico in August, 1969. She was selected to serve as a United States Office of Education Fellow for the 1969-1970 academic year.